IN THE CLAIMS

1. (Original) A prosthetic device for use in the treatment of aortic stenosis in the aortic valve of a patient's heart, said prosthetic device having a compressed state for transarterial delivery and being expandable to an expanded state for implantation, said prosthetic device comprising:

an expandable metal base constructed so as to be implantable in the expanded state of the prosthetic device in the aortic annulus of the aortic valve; and

an inner envelope lining the inner surface of the metal base;

characterized in that said inner envelope in the expanded state of the prosthetic device extends into the aorta and is of a diverging conical configuration, in which its diameter gradually increases from its proximal end within the aortic annulus to its distal end extending into the aorta, such as to produce, during systole, a non-turbulent blood flow into the aorta with pressure recovery at the distal end of the plastic envelope.

2. (Original) The prosthetic device according to Claim 1, wherein, in the expanded state of the prosthetic device, said inner envelope of diverging conical configuration has a proximal end of 5-20 mm in diameter and a distal end of 15-30 mm in diameter, and is of 15-45 mm in length.

3. (Original) The prosthetic device according to Claim 2, wherein said proximal end of the inner envelope includes a short straight section of uniform diameter within said aortic annulus effective to avoid flow separation through said plastic envelope.

4. (Original) The prosthetic device according to Claim 3, wherein said short straight section has a length of 2-10 mm.

5. (Original) The prosthetic device according to Claim 1, wherein said aortic valve of the patient's heart is of the type which includes a plurality of leaflets movable to open and closed positions and wherein said metal base includes two annular clamps engageable with the opposite sides of said leaflets in their open positions for clamping the metal base to said leaflets.

6. (Original) The prosthetic device according to Claim 5, wherein each of said two annular clamps includes an annular array of forgers.

7. (Original) The prosthetic device according to Claim 6, wherein said metal base includes an annular array of bracing elements at the distal end of the prosthetic device engageable with the inner surface of the aorta for bracing the prosthetic device within the aorta.

8. (Original) The prosthetic device according to Claim 7, wherein said bracing elements are integrally formed at one end with said annular array of fingers of one of said annular clamps.

9. (Original) The prosthetic device according to Claim 1, wherein said metal base, in the expanded state of the prosthetic device, extends to said distal end of the inner envelope, such that said inner envelope serves as a liner lining the inner surface of the metal base from said proximal end to said distal end of the prosthetic device.

10. (Original) The prosthetic device according to Claim 9, wherein said metal base at the distal end of the prosthetic device carries a prosthetic valve controlling blood flow from the heart into the aorta.

11. (Original) The prosthetic device according to Claim 10, wherein said prosthetic valve

includes a plurality of leaflets movable to open and closed positions.

12. (Original) The prosthetic device according to Claim 11, wherein said leaflets of the prosthetic valve are integral with said inner envelope lining the inner surface of the metal base.

13. (Original) The prosthetic device according to Claim 1, wherein said metal base is configured and dimensioned to engage only the aortic annulus of the aortic valve when implanted therein, said inner envelope extending into the aorta being of said diverging conical configuration during systole to permit forward blood flow therethrough, but collapsing during diastole to block reverse blood-flow therethrough.

14. (Original) The prosthetic device according to Claim 13, wherein said inner envelope extending into the aorta is of a flexible pliable material. .

15. (Original) The prosthetic device according to Claim 13, wherein said inner envelope extending into the aorta includes a plurality of axially-extending reinforcing struts.

16. (Original) The prosthetic device according to Claim 15, wherein said reinforcing struts are hingedly connected to said metal base.

17. (Original) A prosthetic device for implantation in an orifice formed in a wall of a body passageway, said prosthetic device having a compressed state for delivery via said body passageway to the implantation site, and being expandable to an expanded state for implantation in said orifice; said prosthetic device comprising:

an expandable metal base configured so as to be receivable in said orifice;

and two annular clamps carried by said metal base and engageable with the opposite faces of said wall in the expanded state of the metal base for clamping said metal base within said orifice.

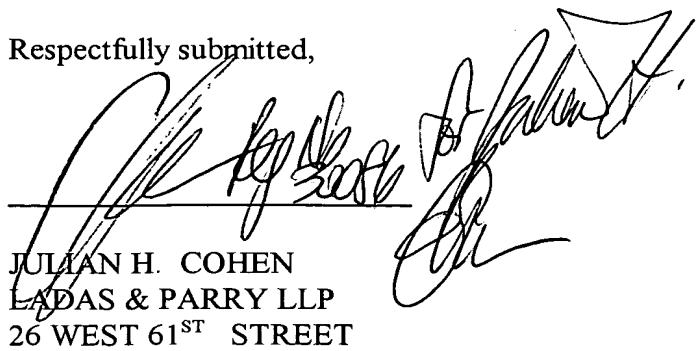
18. (Original) The prosthetic device according to Claim 17, wherein each of said two annular clamps includes an annular array of fingers.

19. (Original) The prosthetic device according to Claim 17, wherein said prosthetic device further comprises an inner envelope lining the inner surface of said metal base; said inner envelope, in the expanded state of the prosthetic device, being of a diverging conical configuration in which its diameter gradually increases from its proximal end within said orifice, to its distal end spaced from said orifice.

20. (Original) The prosthetic device according to Claim 19, wherein, in the expanded state of the prosthetic device, said inner envelope of diverging conical configuration has a proximal end of 5-20 mm in diameter and a distal end of 15-30 mm in diameter, and is of 15-45 mm in length.

Claims 21 - 40 (Cancelled)

Respectfully submitted,



JULIAN H. COHEN
LADAS & PARRY LLP
26 WEST 61ST STREET
NEW YORK, NEW YORK 10023
REG.NO.20302(212)708-1887